

between 100 and 300 times from a dry size to a wet size responsive to being soaked in liquid.

11. The multi-layered, liquid-retaining composite material of claim 10, wherein said liquid absorbing particles have a volume when dry of between 0.1 and 2 cubic millimeters.

12. The multi-layered, liquid-retaining composite material of claim 1, wherein said filler layer comprises:

a fiberfill batting material,
a liquid absorbent particles, and
liquid absorbent fibers.

13. The multi-layered, liquid-retaining composite material of claim 12, wherein said particles enlarge in size between 100 and 300 times from a dry size to a wet size and said fibers absorb at least 2.5 to 3 times their weight in water.

14. A multi-layered, liquid-retaining composite material comprising:
a filler layer comprising:

a fiberfill batting material and

polymer particles capable of expanding 100 to 300 times their original volume responsive to being soaked in liquid.

15. A multi-layered, liquid-retaining composite material comprising:

a filler layer comprising:

a fiberfill batting material and

hydrophilic polymeric fibers that absorb at least 2.5 times the fibers weight in water.

16. The multi-layered, liquid-retaining composite material of claim 15, wherein said hydrophilic polymeric fibers are polyacrylonitrile/polyacrylate fibers.

17. The multi-layered, liquid-retaining composite material of claim 15, wherein said hydrophilic polymeric fibers have diameters ranging from about 10 to 50 microns and lengths ranging from about 3 to 60 millimeters.

18. The multi-layered, liquid-retaining composite material of claim 15, wherein said hydrophilic polymeric fibers have an absorbency range between about 10 to about 40 grams per gram of fiber under a load of 0.5 pounds per square inch using 0.9% by weight saline solution.

19. The multi-layered, liquid-retaining composite material of claim 15, wherein the fiberfill batting material comprises at least one of a woven aramid fiber or a polybenzamidazole fiber.

20. The multi-layered, liquid-retaining composite material of claim 15, wherein said fibers are comprised of absorbent gelling material and said fibers are bi-component fibers.

21. The multi-layered, liquid-retaining composite material of claim 15, wherein said fibers are bi-component fibers of the sheath/core type.

22. The multi-layered, liquid-retaining composite material of claim 21, wherein said fibers:

are composed of not less than 90 weight percent of acrylonitrile and less than 10 weight percent of a water-absorbing resin containing carboxyl groups; and

have a degree of swellability of 10 to 300 cc/g.

23. The multi-layered, liquid-retaining composite of claim 21, wherein said fibers are composed of not less than 80 weight percent of an acrylonitrile polymer, with the remaining weight percent being a vinyl monomer.

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24. The multi-layered, liquid-retaining composite material of claim 21, wherein said fibers are composed of not less than 80 weight percent of an acrylonitrile polymer; and

a water-absorbing resin that contains a carboxyl group in an amount of not less than 3.0 m mol/g.

25. The multi-layered, liquid-retaining composite material of claim 24, wherein said water-absorbing resin

has a degree of water-swellability of 10-300 cc/g;

has a particle diameter of not larger than 0.5 microns at absolute dryness;

and

is insoluble in water.

26. The multi-layered, liquid-retaining composite of claim 22, wherein said fibers have a decrease in the water-holding ratio, after dry-heat treatment at 120°C for one hour, of not more than ten percent.

27. The multi-layered, liquid-retaining composite material of claim 15, wherein said fibers have an inner layer and an outer layer and said fibers are composed of not less than 90 weight percent of an acrylonitrile polymer and having disbursed

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therein less than ten weight percent of water-absorbing resin particles containing at least one carboxyl group represented by $-COOX$, wherein X is H, NH_4 or an alkali metal.

28. The multi-layered, liquid-retaining composite of claim 27, wherein said resin has substantially no water-swellability where X is H and has a degree of swellability of 10 to 300 cc/g where X is NH_4 or an alkali metal.

29. The multi-layered, liquid-retaining composite of claim 27, wherein said resin has a particle diameter of not larger than 0.5 microns at absolute dryness.

30. The multi-layered, liquid-retaining composite of claim 15, wherein the hydrophilic polymeric fiber is blended with the fiberfill in a range of from about 15 percent to 75 percent with the fiberfill.

31. A method of cooling a person comprising:
providing a multi-layered, liquid-retaining composite material comprising a fiberfill batting material, and hydrophilic polymeric fibers that absorb at least about 2.5 times the fiber's weight in water;
soaking said multi-layered composite in a liquid;

employing said multi-layered, liquid-retaining composite material as a garment or a flat sheet.

32. The method of claim 31, wherein said garment is a shirt, vest, pant, or jacket.

33. The method of claim 31, wherein said soaking occurs for a period of 2 to 5 minutes.

34. The method of claim 31, wherein said fibers are composed of not less than 90 weight percent of acrylonitrile and less than ten weight percent of a water-absorbing resin containing carboxyl groups; and have a degree of swellability of 10-300 cc/g.

35. The method of claim 34, wherein said water-absorbing resin has a particle diameter of not larger than 0.5 microns at absolute dryness and is insoluble in water.

36. The method of claim 31, wherein said hydrophilic polymeric fibers have an inner layer and an outer layer and said hydrophilic polymeric fibers are composed of not less than 90 weight percent of an acrylonitrile polymer and

having disbursed therein less than ten weight percent of water-absorbing resin particles containing at least one carboxyl group represented by $-COOX$, wherein X is H, NH_4 or an alkali metal.

~~37.~~ The method of claim ~~31~~, wherein said hydrophilic polymeric fibers are blended with said fiberfill in a range of from about 15 percent to 75 percent with the fiberfill.

~~38.~~ A method of warming a person comprising:
providing a multi-layered, liquid-retaining composite material comprising a fiberfill batting material, and hydrophilic polymeric fibers that absorb at least about 2.5 times the fiber's weight in water;
soaking said multi-layered composite in a liquid;
warming said multi-layered composite material to the desired temperature;
and
employing said multi-layered, liquid-retaining composite material as a garment or a flat sheet.

~~39.~~ The method of claim 38, wherein said fibers are composed of not less than 90 weight percent of acrylonitrile and less than ten weight percent of a water-absorbing resin containing carboxyl groups; and

have a degree of swellability of 10-300 cc/g.

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~~40.~~ The method of claim 38, wherein said water-absorbing resin has a particle diameter of not larger than 0.5 microns at absolute dryness and is insoluble in water.

~~41.~~ The method of claim 40, wherein said hydrophilic polymeric fibers have an inner layer and an outer layer and said fibers are composed of not less than 90 weight percent of an acrylonitrile polymer and having disbursed therein less than ten weight percent of water-absorbing resin particles containing at least one carboxyl group represented by -COOX , wherein X is H, NH_4 or an alkali metal.

~~42.~~ The method of claim 41, wherein said hydrophilic polymeric fibers are blended with said fiberfill in a range of from about 15 percent to 75 percent with the fiberfill. - -